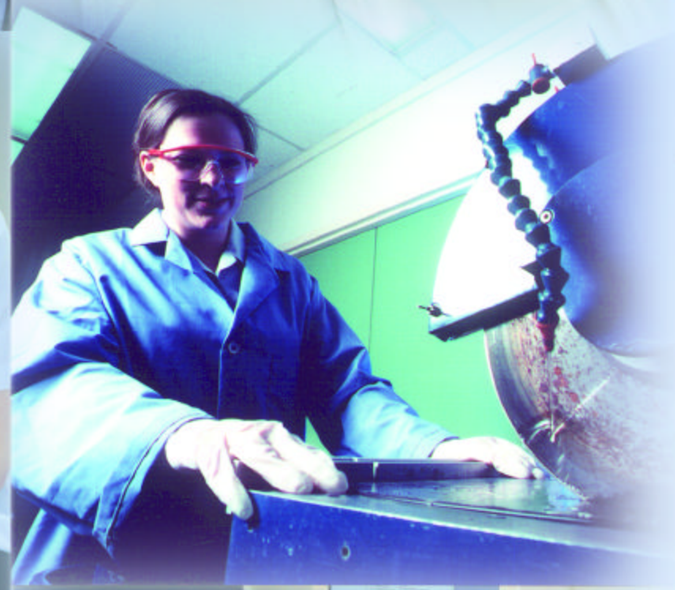
AIR FORCE MATERIEL COMMAND

LEADING EDGE

February 2003



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LEADING EDGE

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AFMC
AIR FORCE MATERIEL COMMAND

Cover stories

Cover illustration by Ms. Sarah Anne Carter, AFMC/PAC.

4 — 13 AFMC: Refreshing the workforce

Despite recent warnings of civilian workforce reductions, AFMC is still recruiting new employees in an effort to manage the expected retirement of many experienced workers. Both actions are necessary, but it does present a challenge to the command's personnel managers. So turn the page to learn how AFMC is working hard to to achieve required reductions without lay-offs while striving to refresh the workforce.

Special Feature

Mission Progress

Features

Departments Briefs

Watching for daddy to come home, but daddy is 2,000 miles away defending our country's freedom. Turn to page 26 to learn how families are coping with the deployment of their loved ones.

Traffic management keeps tankers accessible

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A prototype Global Air Traffic Management-modified KC-135 tanker aircraft was recently deployed into the Pacific theater, where test experts evaluated the system under operational scenarios.

To understand the system, imagine driving to work knowing that every traffic light is green, there are no traffic jams and you will have immediate access to the gate once you get there.

Only you'd have to have a computer system onboard to link you to other traffic and assign you a departure time with mandatory speeds so that you will arrive at your scheduled time. That, from an air traffic view, is the goal of the system.

This system is the Defense Department's response to 1997 rules for communication-navigation-surveillance and air traffic management being phased in over time worldwide. The first aircraft delivery is expected early next year.

The tanker's traffic management program is leading the way for other systems like the KC-10, C-130 and C-5 that are also scheduled to receive the equipment.

— Reported by ASC Public Affairs

AF contract awarded to develop solid-state laser

KIRTLAND AIR FORCE BASE, N.M. — Contracts for $38.2 million were awarded recently to two defense contractors for the development of a 25,000-watt electrically powered, solid-state laser.

One contract was awarded to Raytheon of El Segundo, Calif., for $16.9 million and another to TRW Inc. of Redondo Beach, Calif., for $21.3 million. Each will explore the development of a high-power solid-state laser. Options make each contract worth more than $28 million.

Solid-state lasers can destroy short-range attacking missiles or blind an enemy's optical sensors. They can be small enough to fit aboard fighter aircraft, yet capable of generating enough laser energy to be effective weapons. Future lasers could also be mounted on ground vehicles and ships.

— Reported by AFRL Public Affairs

F/A-22 completes defense acquistion criteria for 2002

EDWARDS AIR FORCE BASE, Calif. — At the controls of the F/A-22 Combined Test Force Raptor 4007, Mr. Jim Brown, Lockheed Martin Test pilot, successfully launches a guided AIM-9 Sidewinder short range missile over White Sands Missile Range in New Mexico, recently. This Raptor mission completes the calendar year 2002 flight test criteria set forth by the Defense Acquisition Executive, which outlines the F/A-22 program's flight test priorities. The mission showed the aircraft's ability to employ the AIM-9 at high speed using an unmanned, full-scale QF-4 Phantom II at medium altitude as a target. The F/A-22 was flying at an airspeed of Mach 1.4 at 24,000 feet while the target was traveling at Mach 1.0 at 14,000 feet. A "lethal hit" was assessed.

— Reported by AFFTC Public Affairs

Global Hawk and UAV supports OEF recon

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — For most of the past year, the Air Force's Global Hawk Unmanned Aerial Vehicle has supported Operation Enduring Freedom by giving warfighters a precise view of the battle.

Global Hawk has provided more than 15,000 intelligence, surveillance and reconnaissance images of potential enemy targets during 50 combat missions surpassing 1,000 flight hours.

Although new to the central command responsibility area, Global Hawk is now seen as a front-line airborne platform.

Before Sept. 11, 2001, Global Hawk experts were fully focused on the UAV's acquisition and development. All that changed following the terrorist attacks.

Despite the additional workload, Global Hawk program office experts continued to execute traditional development efforts for the UAV, even trying new acquisition ideas. The current acquisition strategy calls for six development spirals and 10 production lots. Each spiral increases the vehicles' capability.

Currently, Global Hawk can fly at more than 65,000 feet, travel 1,200 nautical miles to an operating area, and remain on station for more than 24 hours before returning to base.

The seventh and final advanced concept technology platform — slated for use as a test vehicle to support development and upgrade efforts — was delivered late in December 2002.

The first two production Global Hawks are respectively slated for delivery by September and December 2003.

The final production Global Hawk is scheduled for delivery by 2013.

— Reported by ASC Public Affairs

AFMC Working hard on workforce shaping

Mr. Dave Levingston
AFMC Public Affairs

Yes, workforce shaping is still alive in AFMC. Yes, AFMC is still recruiting new employees and working hard to manage the coming departure of many experienced workers. And, yes, AFMC is making reductions to its civilian workforce this year, eliminating nearly 900 jobs across the command.

It doesn't seem to make sense and, in fact, the two actions do conflict with each other in some ways. However, both are necessary, and both are possible to do at the same time. But it does present quite a challenge to the command's managers, workforce and personnel experts.

Adapting for change

In the international situation of the ongoing war on terrorism, it is essential for the Air Force to adapt and change to meet new challenges. Part of that transformation requires both the military and civilian members of the Air Force to be realigned according to the new requirements and missions the Air Force faces. That means more resources are being allocated to the highest priority missions, such as special operations, security and intelligence. But with a constant number of total personnel, increases in one area require reductions in other places. The Air Force must keep its total manpower level in line with its funding.

Today's challenges have forced the Air Force to make some tough choices, according to Mr. William Booth, senior adviser in the Air Force's directorate of manpower and organization.

"We've been directed by the secretary of defense to conduct a review of our entire workforce in order to accurately determine our ability to meet mission requirements in-house," Mr. Booth said.

In the aftermath of the terrorist attacks the Air Force hired additional civilians and brought reserve forces to active duty. However, there has been no increase in the total number of people the Air Force is authorized to have, so the numbers must be drawn back down. But the reductions must be made in a way to allow the Air Force to better accomplish today's missions.

Eliminating positions

In AFMC, Gen. Lester Lyles, commander, has expressed his commitment to avoiding any layoffs of workers to achieve the Air Force-directed reductions. That means the 892 civilian positions that must be eliminated in fiscal 2003 will come from jobs already vacant or that become vacant during the coming year. By the beginning of fiscal 2004 the command should have a much better picture of what will be required in future years and can plan accordingly. AFMC will continue to make every effort possible to handle any future reductions through attrition.

Some reductions, already planned before these latest cuts, will go forward, which means there will be a few layoffs in specific situations, but for AFMC these are not related to the Air Force-wide cuts to be implemented in the coming year.

"The real strength of AFMC is in its people," Gen. Lyles said. "That's why it was and is my top priority to make sure we keep the valuable people who make this command and the Air Force the best in the world."

These reductions do impact the ability of AFMC to pursue workforce shaping initiatives, according to Ms. Polly Sweet, AFMC Civilian Personnel Office. "Minimizing the reduction-in-force process helps — it is an understatement to say that the RIF process does not facilitate workforce shaping efforts."

The command's effort to protect its workers from layoffs will help make the reductions less disruptive to previously implemented workforce shaping efforts while preventing the loss of valued employees. However, the reductions do make it more difficult for the command to use some of the tools available to shape the workforce for the future.

Some bases are still planning to use the flexibility of offering force shaping incentives, which create vacancies that can be used to refresh the force. This authority was granted in the fiscal 2002 Defense Authorization Act for fiscal 2002 and 2003.

Refreshing the force

In addition, the Air Force has centrally funded positions specifically to hire trainees and co-operative education students this year. Each of AFMC's centers will be included in these efforts to help refresh their force. The command is also attending several high profile career fairs, with the intent of recruiting high quality candidates for critical positions.

In summary, in addition to many Defense Department initiatives of innovative ways to recruit and retain professionals, the command has developed many of its own initiatives, including: continuing education programs; co-op and work exchange programs; mentoring programs; entrance and exit employee surveys, college and industry recruiting programs; and the Air Force Research Laboratory Personnel Demonstration Project.

This issue of *Leading Edge* covers many of these initiatives intended to keep our technologically advanced workforce viable, by striving to refresh and renew a strong workforce upholding the tradition of technological achievement and innovation. As AFMC adjusts and transforms its workforce to meet the missions of the 21st century legacy continues.

Eglin breaking through diversity barriers

Meeting the challenge of replacing an aging workforce is one that scientists and engineers at Eglin Air Force Base, Fla., are taking seriously.

Dr. Steve Butler, Director of Engineering for Eglin's Air Armament Center recently said that "challenged with equipping the world's best Air Force for the new millennium, we must aggressively pursue strategic alliances in order to keep our workforce viable."

Making it happen

And to meet this challenge, he appointed Mr. Curt Kirkland as the recruiting program manager and hired Mr. John Miner, the former administrator for the Air Force's Scientist and Engineer Career Program, as technical director, to make it all happen.

Under Dr. Butler's leadership, his team broke through diversity barriers and focused on building relationships between Eglin and seven key regional universities. This included The University of Puerto Rico at Mayaguez because of its environmental similarity to the Emerald Coast of Florida, its five-year engineering program and male-to-female ratio.

"According to the U.S. Census Bureau, the Hispanic community is the fastest growing diversity group in the United States," Mr. Kirkland said. "It is estimated to encompass 30 percent of the population by 2020."

Networking

The team began last February, working closely with the Society of Hispanic Professional Engineers. Mr. Miner, along with Mr. Edwin Feliciano, Eglin's Hispanic employment program manager, worked closely with the deans at the university and other professional agencies, including the Florida Chapter of the Colegio de Ingenieros y Agrimensores de Puerto Rico in Orlando, who function as the regulator of professional engineering in the Commonwealth of Puerto Rico.

In October, the Eglin team met with key officials at the university, the Polytechnic University of San Juan and the CIAPR Headquarters. In addition to promoting the Air Force at student organization meetings and job fairs, the team interviewed students, communicated faculty research and sabbatical opportunities, and energized the Air Force ROTC senior class.

"We also worked with the UPRM Civil Engineering Department to define the Air Force requirements for a program management certificate to ensure graduating engineers were prepared for acquisition programs by developing needed skills prior to entering the workforce," Mr. Miner said.

Generating interest

Since their trip to Puerto Rico, the Air Force Personnel Center at Randolph AFB, Texas, and the Engineering Directorate at Eglin have been flooded with telephone calls and e-mails from interested parties.

"Statistically speaking, the Puerto Rico experiment was extremely successful — 204 resumes were collected of which 48 percent were female," said Dr. Juan Lopez, the chief technologist of Sverdrup-Jacobs. "To date, 15 selections were made after 82 interviews."

"This team approach will serve as a model for us to ensure successful relationship building at our other target universities," Mr. Lopez said. "We discovered research interests in high explosives we didn't even know existed and faculty members have expressed interest in sabbaticals and basic research."

"Eglin has strategically opened the door to Puerto Rico and discovered a wealth of talent that will help equip us to meet the challenges of the 21st century," Mr. Miner said. "Hispanic diversity can and will continue to promote the strongest Air Force values and excellence in the engineering profession," he concluded.

— Ms. Karen Sledge, AAC Engineering Directorate

Photo: Ms. Kinnan Kline, a graduate engineering science candidate, demonstrates to Dr. Steve Butler and Dr. Pat Sforza performance on cameras used in the tomographic density diagnostic instrument currently under development.

Members of the 450th Test Squadron Airdrop Element, 412th Logistics Group Instrumentation Division and the 412th Test Wing Engineering Directorate at Edwards AFB, Calif., perform crash load testing of the bi-level aircraft loading system on the aircraft thrust stand. Edwards is activally recruiting engineers as a 13 percent shortfall of qualified engineers is expected in coming years. (AFFTC photo)

AF battles shortages of scientists, engineers

The Air Force continues its fight to remedy a shortage of scientists and engineers, as nearly one third of that workforce becomes retirement eligible in the near future.

The shortages facing the service have been further compounded by competition with industry for people with technical skills, said Lt. Gen. Stephen Plummer, principal deputy in the office of the assistant secretary of the Air Force for acquisition at the Pentagon.

"We simply do not have enough scientists and engineers, military or civilian, to meet our requirements," he said. "This is disturbing because we rely on the fact that we are a technologically advanced force.

"If one looks back over the past 15 years at all the conflicts the Air Force has been involved in, we've enjoyed overwhelming success due in large part to the superior technology that we've been able to employ," he continued. "That technology was made possible by scientists and engineers. Gen. Henry 'Hap' Arnold told us years ago to 'Remember the seed comes first. If you are to reap a harvest of aeronautical development, you must plant the seed called experimental research.'"

Estimating shortfalls

At Edwards Air Force Base, Calif., according to information supplied by the 412th Test Wing, the latest estimates are projecting a 13 percent shortfall of engineers.

"The 412th Test Wing Engineering Directorate, working in conjunction with other base agencies, developed a plan two years ago and is currently implementing this plan to recruit new scientists and engineers, while also providing opportunities and training to our current workforce in order to retain the talented personnel we have today," said Maj. Shawn Shanley, 412th Test Wing Engineering Directorate deputy director.

"Through the plan we installed two years ago and its implementation today, we are continuing to provide the 'intellectual capital' necessary to support the test wing and center mission now and for the future," said Maj. Shanley.

To guarantee access to these technologies on future battlefields, the Air Force is developing several initiatives to ensure it maintains a strong scientist and engineer workforce.

A critical first step

According to the general, the first critical step taken to resolve this problem was appointing the Office of the Assistant Secretary of the Air Force for Acquisition as the functional manager for all Air Force scientists and engineers.

"That move eliminated one of the biggest hurdles that I saw in managing this workforce," Gen. Plummer said. "Before, the workforce was one of a very few number that lacked a functional manager to look after the people in the career field. Now that there is a functional manager, we can focus on developing initiatives to revitalize the workforce."

One of these initiatives has been a retention effort to "re-recruit" engineers. Several senior Air Force engineers recently went out to the field and met with more than 1,500 junior engineers.

"The purpose of this was two-fold," Gen. Plummer said. "Senior engineers were able to talk to people face-to-face and explain to them that we know there are issues about the career field that need to be addressed, and we're working those. It also provided us with a great opportunity to get feedback from the field as to what we could do that would make life better for them."

Greater opportunities

Another initiative is a career development guide for scientists and engineers. In the past, there has not been a guide to help them define career goals, professional development and paths to greater career opportunities throughout their service.

A mentoring guide will also be made available on the World Wide Web to help young scientists and engineers link up with a proper mentor. It will also help facilitate the mentoring activities that occur between the young scientists or engineers and their mentors.

Other more monetarily focused initiatives will help the Air Force better compete with industry for talented people. These initiatives include retention bonuses for scientists, engineers and program managers, and robust college recruiting.

The Air Force also is active in "co-op" programs, Gen. Plummer said.

Co-op programs allow students seeking technical degrees to work either part-time while attending class or alternate between working one term and going to school the next. These programs benefit the students by giving them much-needed experience before they graduate and helps the Air Force bring these newly graduated scientists and engineers onboard.

"Our scientists and engineers need to know that Air Force leaders understand the problems they're facing and are giving their full support to developing solutions to overcome these problems," Gen. Plummer said.

Gradual improvements

It is essential for those in the career field to know that improvements will be gradual, but steady, the general said.

"As we continue to work these on a daily basis, they need to know that it's not going to be a quick fix," he said. "We are embarking on the road to recovery, but it's going to take us a while to get there. We will get there because it's too important not to."

To assist in the recruiting efforts at Edwards, the engineering directorate is using traditional and non-traditional methods. "We're using the Internet to advertise openings and collect resumes," said Maj. Shanley. "We're also using a billboard on Highway 14, are actively recruiting at colleges and universities, and a Web page with listing of job vacancies."

As for retention, a training program is being used to train new hires and to keep existing engineers current in their technological field and allow them to branch out into other disciplines. Engineers are also encouraged and allowed to pursue graduate degrees part-time or full-time.

"We offer engineers a diverse career field choice by allowing the flexibility to work with various systems, but also in different disciplines to obtain breadth of experience," said Maj. Shanley. "All these efforts are positive changes helping us to recruit highly qualified engineers to Edwards Air Force Base."

— 2nd Lt. Tony Wickman, AFFTC Public Affairs (Some information courtesy of Air Force Print News)

Local scientist and engineer recruitment goes full speed ahead

With the Air Force test world facing shortages in civilian scientists and engineers, the Edwards Air Force Base, Calif., civilian personnel office has been working to recruit aerospace and electronics engineers.

"For several years we have been very aggressive in recruiting for all occupations, especially in engineering," said Ms. Jan Taylor, civilian personnel recruitment office chief.

Current hiring practices of incoming engineers will not be sufficient to replace the large number of those leaving, she said. In an effort to counter manning shortages in this career field, the civilian personnel office here is getting creative about recruiting quality people.

Monthly job fairs are held in the Southern California area, and civilian personnel recruiters and test engineers are on hand to answer questions in support of the recruitment effort. Internet recruiting is also a big part of the process, where job listings are available on the Edwards Web site. Billboards on local freeways and newspaper advertisements announce the need for engineers at Edwards.

Word of mouth through family members, friends and co-workers is another method that has proven helpful. "It's amazing," said Ms. Taylor. "Family and friends become a starting point for information. Our employees are our best recruiters."

While the civilian personnel concentrates on marketing, Edwards engineers are spreading the word through community involvement, said Mr. Tony Rubino, 412th Test Wing engineering development office chief.

"Not only do we, as engineers, get involved in local area job fairs, we also have a long-term vision to mentor and grow engineers in the Antelope Valley," said Mr. Rubino, who is also involved in familiarization training for newly employed engineers at Edwards.

"We routinely attend career nights at local schools looking for students who are interested in working in the high school engineering intern program here."

As part of the goal for engineer recruitment, career nights are a way for the engineers to introduce themselves to the students and answer questions, said Mr. Rubino. In turn, engineers ask students what they want as a career.

— Master Sgt. Anne Ward, AFFTC Public Affairs

Mr. Tony Rubino, 412th Test Wing and Ms. Kelli Vanden Boom, 416th Flight Test Squadron, discuss job options with a Littlerock High School junior and cadet in the school district cadet corps, at a career night held at Lancaster High School. (Photo by Master Sgt. Anne Ward)

Laboratory works to recruit future scientists and engineers

2nd Lt. J. Elaine Hunnicutt
AFRL Public Affairs

People are considered the most important resource at the Air Force Research Laboratory, and officials there are employing many innovative programs in their recruitment efforts.

A variety of methods are currently in place to meet AFRL's hiring requirements, including: advertisements, conferences, collaborations with historically black colleges and universities, the Laboratory Demonstration Project, scholarships, open houses and intern programs.

Aiming for the top

"People are the most important resource at the lab, and we think we have a superb program that recruits and retains the top scientists and engineers," said Mr. Robert May, AFRL executive director. "Our vision says it all, 'AFRL defends America by unleashing the power of innovative science and technology.' Who wouldn't want to be a part of this?"

The first method, includes a $100,000 advertising budget that was put in place this year and is being used to strategically target female and minority engineers and scientists via their professional and student organizations' publications.

The AFRL 'road show'

Secondly, recruiting conferences are opportunities to make one-on-one contact with interested candidates. AFRL makes every attempt, according to Ms. Gay Dugan, AFRL Human Resources, to attend as many conferences as possible throughout the year.

In fiscal 2003, AFRL recruiters will attend several conferences which focus on the achievement of women, minority engineers and scientists.

An AFRL state-of-the-art exhibit at these conferences shows the latest the laboratory has to offer and includes video footage of AFRL technologies. In addition, scientists and engineers will be present to explain life within the lab to potential candidates.

Third, collaborations with historically black colleges and universities and other minority institutions have proven to be useful collaborative tools to transfer scientific technology and recruit potential employees.

Contracts are awarded to these colleges and universities to conduct Air Force-funded research and development projects of mutual interest.

An example of this is when the Materials and Manufacturing Directorate recently awarded a contract to the North Carolina Agricultural and Technical State University to perform research in the area of nondestructive evaluation of materials.

Gaining hands-on experience

Through programs of this nature, faculty and students come into the laboratory to get hands-on experience working with the latest technologies or AFRL professionals may spend time in those partnership colleges and universities as guest speakers or as instructors.

According to Mr. Edmund Moore, materials and manufacturing directorate, the directorate's focus is on forming research and development collaborations that offer faculty and students exposure to AFRL, with the goal to recruit graduates of these schools for employment.

Keeping it simple

The Laboratory Demonstration Project, "Lab Demo," is a human resources tool that combines several human resource techniques, including compensation for contribution and a new simplified classification system, to increase retention and, hopefully, entice new recruits. For more information on this project, see the sidebar article.

"Our people are our most important resource and we think we have a superb program that recruits and retains the top scientists and engineers," said Mr. May.

'Lab Demo' hits high stride

The Air Force Research Laboratory's Personnel Demonstration Project, or "Lab Demo," is making strides to ensure our depleting science and technology career fields are competitive with civilian markets.

The Lab Demo combines several human resources techniques including compensation for contribution and a new, simplified classification and broadbanding system.

Under the system, employees are compensated based on the contribution to the organization's mission. High contributors can move through the pay bands quickly, and all employees are expected to increase their contributions in order to receive increases in pay.

Multiple parts

There are three parts to the Lab Demo: Simplified job classification, broadbanding and contribution-based compensation system.

First, by using the simplified job classification process supervisors determine the organization's needs and create appropriate job descriptions.

According to Ms. Michelle Neuner, AFRL Human Resources, due to the complex nature of the science and technology career fields it was imperative that classification authority be delegated to management.

Supervisors are able to create jobs descriptions or rewrite job descriptions for incoming employees.

Second, in broadbanding, the seven traditional civil service pay grades have been combined into four pay bands. Unique to this process, employees can advance to higher bands through the contribution assessment process.

With the third component, contribution-based compensation system, the goal is to ensure salary money is spent more wisely. The system awards salary increases to the most deserving versus longevity.

Measuring employee contributions

According to Ms. Neuner, the system measures the employee's contribution to the organization, provides an equitable and fair basis for salary adjustments, does not view pay increases as entitlements, supports rank-in-person concept and dual track and provides a seamless movement through and between broadbands based on contribution to the organization.

All employees are assessed against the same six factors: technical problem solving, communication skills, corporate resource management, technology transition, research and business development and teamwork and leadership.

For more information see:
http://www.afrl.af.mil/personnel-demo/

— 2nd Lt. J. Elaine Hunnicutt, AFRL Public Affairs

ASC initiatives ensure legacy continues

Mr. Douglas Atkinson
Chief, Plans and Programs
ASC Engineering Directorate

The future of our defense lies in maintaining technological superiority, and that depends on sustaining a scientific and engineering workforce capable of retaining corporate knowledge.

We have all seen the alarming statistics showing the impact of a decade of downsizing on this workforce. In fact, in just a few years we will be in a situation where over half of our workforce will be eligible for retirement.

In response, the Engineering Division at Aeronautical Systems Center, Wright-Patterson Air Force Base, Ohio, has instituted several initiatives to begin filling this workforce void and enhance retention in mid-career engineering professionals.

Recruiting students

One of the ways they're doing this is focusing on an intense college recruitment program. Using a combination of local hire initiatives and the Air Force intern program, or PALACE Acquire program, ASC has hired more than 92 new engineering graduates.

More than 20 visits this year to college career fairs have resulted in interest from more than 800 newly, or soon-to-be graduated, engineers seeking employment here. A highly motivated recruiting team has been armed with a 25 percent recruiting bonus and payment of college loans for PALACE Acquire interns, helping to make this program a success.

Retention initiatives

But hiring people is only the beginning, keeping them is even more challenging.

One aspect of retaining newly hired employees is finding ways of instilling a sense of contribution to the Air Force mission. To do that, a civilian employee "blueing" program is being used here.

There are two types of "blueing" trips, the first of which demonstrates the organic capability at Wright-Patterson in terms of aerodynamic, biomedical and structural testing. New engineering hires were recently taken to two different types of wind tunnels, the vertical wind tunnel and the subsonic aerodynamic research laboratory, the centrifugal force testing facility and the structural testing facility at the Air Force Research Laboratory located here.

The second type of "blueing" trip exposes new hires to different phases of Air Force systems acquisition like research, development and testing, as well as to the operational utilization and maintenance of systems being developed here. In addition, groups of new engineers were taken to Edwards AFB, Calif., the Boeing C-17 development and production facility in Long Beach, Calif., Eglin AFB, Fla., and Hurlburt Field, Fla.

When opportunity knocks

The directorate also takes advantage of "pop-up" opportunities, such as a recent B-1 bomber visit to Wright-Patterson. The aircraft flight crew gave engineers an aircraft tour and explanation of each of the major aircraft subsystems and their operation. It is felt the interaction with systems users, testers and maintainers will allow our engineers to deliver better products.

Another way to retain is to apply engineering skills and energy on real-life state-of-the-art weapon system development programs. Junior engineers have the opportunity to directly contribute to the development of new systems. Whether an electronics engineer, mechanical engineer or aeronautical engineer, opportunities abound for contributions to many ongoing programs while working under the mentorship of senior engineers and managers.

Mentoring programs

Mentoring of new engineers is a critical aspect of their development. In addition to their routine mentoring, senior leaders are committed to providing additional high-level encouragement and guidance.

For example, Mr. Jon Ogg, ASC Engineering director, meets with small groups of new engineers every six months for three years for a "no-holds barred" discussion on their experiences, future desires and expectations.

These sessions are intentionally probing to ensure individuals are receiving challenging assignments, mentoring and training.

Another example of mentorship is the Eagles program, where newly hired engineers are given opportunities to sharpen their presentation and briefing skills by preparing and delivering project briefings to senior leaders. This non-threatening, learning environment fosters encouragement and builds a strong communications foundation for future leaders.

Identifying initiatives

Initiatives have also been established to improve retention across the entire workforce in two areas consistently identified as important in the Chief of Staff Survey results: communications and educational opportunities.

In order to improve communication within the directorate, Mr. Ogg and the directorate division and branch chiefs established a brown bag lunchtime program, meeting with a small group of engineers from across the organization in an informal setting to discuss whatever is on their minds.

This non-attribution setting allows them to voice their thoughts, concerns and ideas in a relaxed environment, while improving two-way communications within the directorate.

Educational opportunities

We have also recognized access to educational opportunities is consistently identified as a quality of life issue, and training is critical to maintaining an up-to-date workforce. One initiative to improve access is our lunchtime masters program.

Aeronautical Systems Center and the University of Dayton jointly developed a program offering two courses per semester during lunch hours in the engineering conference room. This program could be completed in two years and was specifically designed to meet the needs of the directorate. On-site access to the program eliminated commuting time and had the added benefit of promoting a sense of camaraderie with coworkers.

The original class graduated 45 students. Forty-two students are currently enrolled in the second offering, and a third offering is in the planning stages.

Another educational opportunity is the engineering learning center, which has arranged for on-site short courses in a wide variety of high interest technical areas ranging from aircraft certification to aircraft battle damage repair.

Nearly 1,500 students have participated in courses provided by technical experts from industry, academia and other government agencies.

The center also provides framework for highly specialized technical short courses developed and taught by our own technical experts. More than 60 courses have been developed and utilized as a tool for transitioning their knowledge to the next generation.

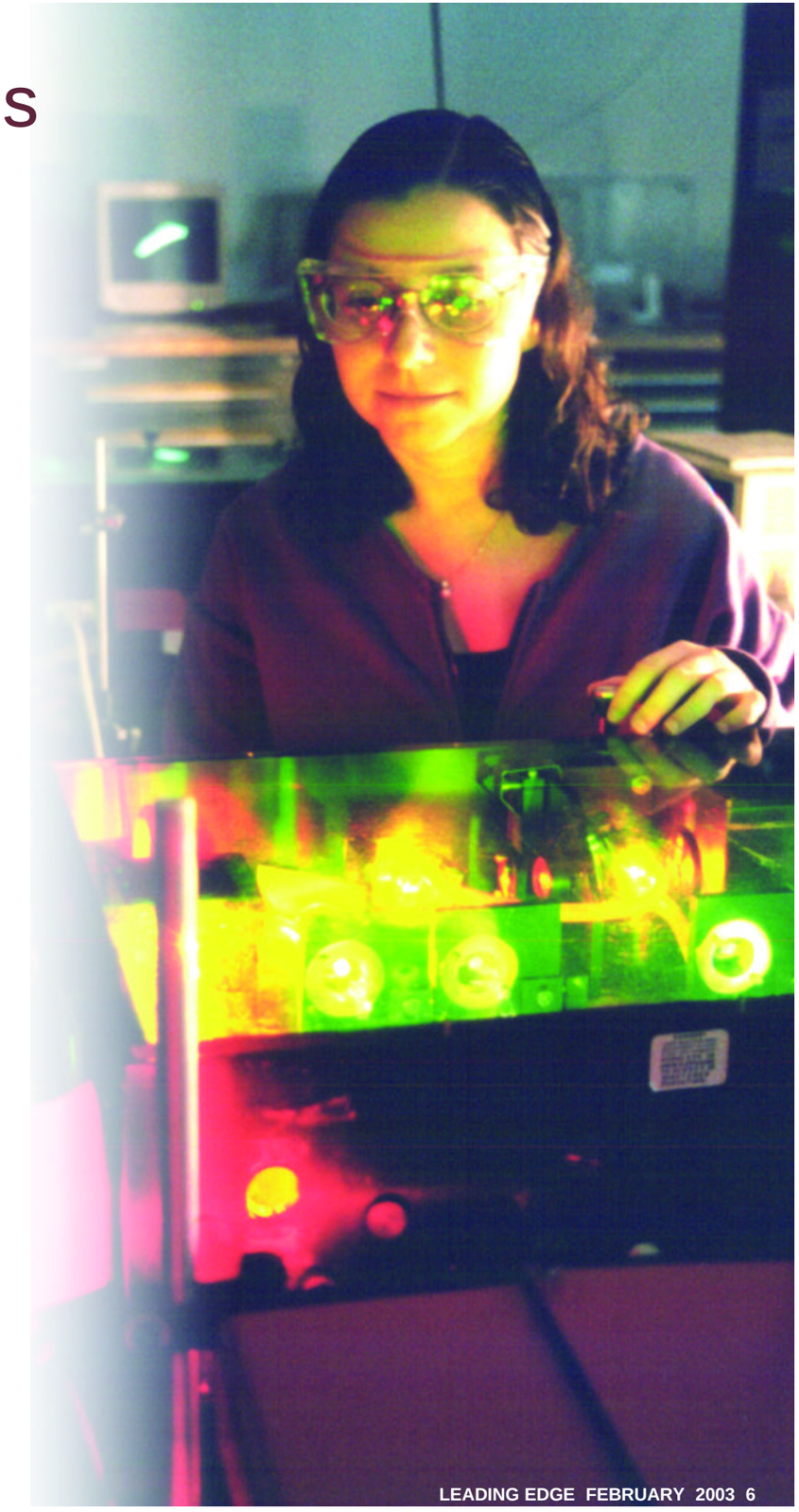
Exchange programs

Exchange programs across the command that provide opportunities for individual growth and career broadening are another successful retention initiative.

The directorate established relationships with the Air Force Materiel Command Engineering Directorate and AFRL where engineers are provided an opportunity to experience their roles and contributions during a one or two year assignment.

Engineers have also been given the opportunity to hone their core acquisition skills during assignments as program managers. These assignments allow individuals to expand their knowledge while maintaining their ability to return to their engineering foundation.

The engineering directorate strives to continually refresh and renew a strong workforce to uphold the tradition of technological achievement and innovation. Recruitment of new engineers with ideas and enthusiasm from academia, combined with constant attention to retention of the finest engineering workforce anywhere, will ensure that legacy continues.



One initiative the Aeronautical Systems Center offers is to provide an opportunity for engineers and scientists to work at the Air Force Research Laboratory on a two-year assignment, expanding their knowledge before returning to their engineering foundation.

Hill launches recruiting initiatives

Ms. Sami Mansour and
Mr. James Seely
OO-ALC Engineering Directorate

The need to both recruit and retain scientists and engineers is receiving top-level attention at the Engineering Directorate at Hill Air Force Base, Utah, and the Ogden Air Logistics Center has launched several initiatives in order to address these issues.

One of these initiatives is an increased support of the science and engineering PALACE Acquire program, established to heighten the Air Force's ability to maintain the leading edge in today's technology-intensive environment.

The program offers select scientist and engineering graduates a well-planned, three-year, development and training program, including one year of graduate studies in a select state-of-the-art technology.

In support of the program, the center recently sent six of its employees to Randolph AFB, Texas, for training as recruiters. Over the last three months, these recruiters have visited eight different universities and have brought back hundreds of resumes of potential candidates.

The recruiters helped process resumes, and promoting the program has already begun to bear fruit since highly qualified scientists and engineers are beginning to accept positions at Hill. The goal is to establish 15-25 PALACE Acquire positions to fill vacancies from both attrition and new workload opportunities.

Back to basics

Another initiative within at the center was begun as a natural follow on to the creation of the engineering directorate itself. In developing the mission and vision statements for the new directorate it became apparent that there needed to be a re-focusing on recruitment and retention.

As a result of input received during the "Engineering Roadshows" conducted throughout Hill during the summer of 2002 to address the needs of the science and engineering community, both civilian and military, several topics were brought to the forefront.

A worker at Hill AFB, Utah, assembles a circuit board. Officials at Hill are actively recruiting new workers. (Courtesy photo)

These included the following topics that are currently being addressed for implementation:

— Intra- and inter-center rotational assignments for science and engineering personnel in order to keep up-to-date in their selected fields and to provide them exposure to other processes and methodologies, while at the same time keep their work rewarding and challenging.

— Reinforcement of the need for continuing education and the benefits to both the individual and the Air Force to be gained from such education.

— Encourage membership in appropriate professional societies so they are presented the opportunity to intermingle with industry and share ideas.

— Recognition of the accomplishments of scientists and engineers, including the presentation of awards and articles in the local base newspaper.

With respect to recruiting qualified personnel locally, the engineering directorate participated in the Air Force Materiel Command fiscal 2002 centralized military and civilian scientist and engineering recruiting efforts.

Community efforts

The directorate also utilizes numerous local opportunities to tout the capabilities of the scientific and engineering community and to use functions such as open houses, air shows and job fairs to reach potential candidates.

Engineering personnel at Hill are also actively involved in programs at local schools. This involvement ranges from direct contact with the classroom to presenting science and engineering topics to the students, to assisting with the development of science fair topics, to actually judging in the local, regional and state science fairs.

High-level attention

The importance of the science and engineering community to the Air Force was brought into focus recently when scientist and engineers had the unique opportunity of meeting with Lt. Gen. Stephen Plummer, principal deputy, Office of the Assistant Secretary of the Air Force for Acquisition.

Gen. Plummer was recently selected as the Air Force scientific and engineering functional manager, and he briefed the workforce on current recruiting and retention initiatives and provided an opportunity for them to discuss workforce issues.

Gen. Plummer was accompanied by Mr. Ron Garcia, chief of the scientist and engineer career program office at Randolph, and Mr. James Papa, chief of the AFMC Engineering and Technical Management Directorate.

Also, in conjunction with Lt. Gen. Plummer's visit, Mr. Ralph Paglia, from the Scientist and Engineer Career Program team from Randolph, traveled to Hill to conduct one-on-one career planning counseling sessions. He also helped evaluate individual goals and answered questions pertaining to the personnel process.

U.S. Air Force Museum

Transmitting core values and military traditions

Sleek jets, sophisticated technology, diverse career fields and a dynamic mission — all portrayed in action-oriented recruiting commercials appearing on national television — help the Air Force appeal to and attract young people to the service.

Increasingly, another resource is emerging as a persuasive recruiting tool for the Air Force — its own national museum.

Major recruiting asset

Already recognized as a major historical institution and tourist attraction, the U.S. Air Force Museum, Wright-Patterson Air Force Base, Ohio, is positioning itself as a major recruiting asset to the Air Force. Having embarked on a path of dramatic growth to its facilities and collection, the museum continues its pattern of drawing increasingly younger visitors, and, by extension, possible recruits.

Construction of a new 200,000 square-foot third building is progressing toward an early spring 2003 opening. The first and centerpiece phase of a massive expansion effort to later include a hall of missiles, space gallery and education center, the building will afford the museum additional space to exhibit more modern and emerging capabilities to appeal to young visitors contemplating an Air Force career.

"Our expansion will provide us badly needed extra space to add to our collection items such as the Boeing technology demonstrator Bird of Prey and a prototype of the Joint Strike Fighter," said Mr. Charles Metcalf, museum director. "Factor in a B-2 stealth bomber that we will put on display this year along with aircraft we currently have such as the F-117 stealth fighter, YF/22 Raptor prototype and the Predator Unmanned Aerial Vehicle, and the picture that forms is that of a place that houses not just a fabulous history but also a growing collection that dramatically represents today's high-tech Air Force."

Considering recent demographic trends in the museum's visitorship, projecting the service's technologically innovative image is an important aim of the museum in performing its mission of telling the Air Force story. In recent years, the museum has recognized a demographic shift, bringing in younger visitors captivated by modern Air Force capabilities such as speed, stealth, precision weapons and information dominance.

Modern collection appreciated

"Invariably, many of our younger visitors run past our older aircraft and head for the more modern collection," said Mr. Metcalf. "They want to see the YF/22 or stealth fighter. Today's Air Force really animates them, and we're glad to be a place where the pilots, engineers and Air Force leaders of tomorrow can come to gain vision and inspiration for their career goals."

The museum's current effort to expand its facilities and modern aircraft collection follows on the heels of an earlier implemented and continuing effort to dramatize the Air Force story through the proliferation of sensory appealing exhibits. Building such dioramas around aircraft places the aircraft in historical context for younger visitors and transmits to them core values and principles inherent in the Air Force and military tradition.

Capitalizing on captive audience

"There's no doubt that technology captures the attention of our younger audiences and encourages many of them to consider the Air Force as a possible career path," said Mr. Metcalf. "But it's the timeless values that transcend historical eras that inspire their hearts. Principles such as duty, courage and sacrifice combined with the Air Force's core values of integrity, service before self and excellence in all we do are what truly make the Air Force story come alive and call to young Americans seeking to serve their nation."

— Mr. Chris McGee, U.S. Air Force Museum Public Afairs

Air Force Materiel Command personnel have dedicated themselves to aggressively support those who support our trade — the warfighter. Here personnel from the 86th Maintenance Squadron at Ramstein Air Base, Germany, conduct visual operation checks during an engine run. (Air Force photo by Staff Sgt. Edward Holzapfel)

Predictive Support Awareness

Transforming to deliver P.R.I.D.E to the warfighter

Maj. Gen. John Barry
AFMC Director of Plans and Programs

Gen. Lester Lyles, Air Force Materiel Command commander, said we face one constant in the changing world - the operational community depends on us to provide the capabilities needed to defend the United States and protect its interests.

The command's vision to deliver Proactive Rapid Integrated Dominant Effects to the warfighter, or P.R.I.D.E, enables us to provide that core capability. We must place special emphasis on anticipating our customer's requirements and not only meeting those needs, but exceeding them. The only way to win future conflicts is by innovation and the ability to integrate with other major commands ensuring a "total package" approach.

Changes are coming

The cultural transformation underway in this command will result in a workforce with an expeditionary and warrior mindset to meet the challenge of providing information, planning, analysis, sourcing and facilitation of support needs.

One new concept being used in this transition is Predictive Support Awareness, or PSA, a real-time and iterative methodology that uses common data elements enabling proactive assessment, analysis and prioritization of response options, based on an understanding of future needs relative to current capabilities. It is simply a way to improve the situational awareness of our senior leaders regarding current and future support provided to the warfighter.

The command must take responsibility for the concept of operations for sustainment, continually re-evaluating our ability to provide support.

Working together

In other words, PSA is a perfect complement to Air Force Chief of Staff Gen. John Jumper's Predictive Battlespace Awareness, or PBA, initiative which is an operational versus support focus. By linking sustainment more closely with operations, PSA can provide a force multiplier that allows for a more adaptive, innovative, responsive and effects-based interaction with the operational community.

Improved communication is a key aspect to improving our interaction with the operational community. By participating in exercises, war-games and training activities we will remain engaged with the operational commands maintaining closer ties and training as we plan to fight.

In addition, because Air Force operations require realistic plans to evaluate relevant operational courses of action, AFMC must join in operations planning cycles to ensure that support issues are addressed. These developed plans cannot be left to gather dust on a shelf, but must be kept up-to-date to maintain operational relevance.

While PBA's use yields information about the likely success of proposed operations, PSA can provide sustainment analysis, yielding complementary information about how to source sustainment resources to avoid logistics obstacles.

Looking ahead

For example, what are the leading indicators for potential munitions shortages, what on-going mission capable problems can be mitigated, what groundwork can be accomplished to ensure hurdles aren't encountered at Customs?

Looking at these issues before they become problems allows us to provide realistic plans that will in turn increase the probability of success for whatever plan is implemented.

The PSA building blocks include five primary elements receiving special focus: parts; munitions; combat mission support statement; enterprise leadership; innovative Air Force Research Laboratory technologies and science initiatives. For information on these topics, see the accompanying stories.

Effects-based air and space power will be truly enhanced when a comprehensive integration of operations and sustainment planning occurs, keeping in mind that speed is of the essence. A precise and compressed timeline is essential to ensuring dynamic planning and execution of those plans.

How to begin? We require a single-view, common operating picture that portrays all sustainment activities status, and is presented in a mode available to appropriate levels throughout the command.

Linking status of any element of support, such as the mission capable rate for any given weapon system, and the support data allows senior leaders access to quality information at the level appropriate for their action. A summary view on a knowledge wall, showing the status on predictive shortages at a macro-level with a system of "stoplight" entries is powerful. PSA becomes a force multiplier by enabling decision-makers to gain insight into causal data, current activity status and alternatives.

The PSA knowledge wall fosters a change in perspective from that of checking and reporting status of everything we manage on a set schedule, to a posture where current status changes are received in near real-time and in automated fashion. In turn, this reduces the number of details being monitored, and allows a greater proportion of management attention to be focused on potential future shortages that need increased visibility.

Supporting the warfighter

AFMC personnel have dedicated themselves to the business of ensuring we are warriors - aggressively supporting those who deploy with the tools of our trade. Now is the time for AFMC to step forward and give our Commander increased situational awareness of sustainment operations. This enables us to transform the way today's Air Force utilizes all the work accomplished here, while instilling confidence in our ability to proactively support the warfighter.

Members of the 31st Security Force Squadron stand guard over a Fighting Falcon deployed to Caslav AB, Czech Republic. AFMC personnel have dedicated themselves to supporting those who deploy with tools of our trade. (Air Force photo by Master Sgt. Keith Reed)

PSA — Enhancing situational awareness

Enterprise leadership

Air Force Materiel Command experts envision that Predictive Support Awareness will cover all conceivable support issues, focusing on five primary elements, according to Maj. Gen. John Barry, AFMC Plans and Programs director. Those areas are: Enterprise Leadership; parts; munitions; combat mission needs statements; and technology innovations.

These elements will collectively provide links necessary to help warfighters predict needed future actions by being more aware and better informed of the situation they're facing, Gen. Barry said. A linked perspective of these various areas will allow the AFMC commander and his staff to view what operational commanders in the field need, combined with the status of parts and ammunition, as well as innovations at or near completion in AFMC laboratories.

This and the following pages offer a top-level view of each of these assessment areas and their contribution to PSA, starting with Enterprise Leadership.

AFMC's Enterprise Leadership is a method to integrate the many different processes needed to acquire or sustain a system as Air Force Chief of Staff Gen. John Jumper said, "Enterprise Leadership equals horizontal integration." It puts a single person in charge of a system of systems, leading to better development decisions and making it easier for customers to get solutions from a single point of contact, said Gen. Lester Lyles, AFMC commander.

"Enterprise leadership shatters information stovepipes," Gen. Lyles said. "It dovetails perfectly with agile acquisition and other transformation efforts."

Enterprise leaders will assess what technology is available to satisfy a capability shortfall, officials here said. This process will bring together experts from the laboratories, development and support organizations to provide the warfighter integrated sets of options which can be implemented rapidly.

In short, officials said, programs organized under Enterprise Leadership produce a greater effect than the sum of programs acting individually.

"Adding the contextual frame of the Enterprise Leadership construct will make sure the service's broader needs are considered at the same time that the warfighter's needs are addressed - proactively, said Gen. Barry.

Munitions

Beyond having adequate parts to allow Air Force weapons platforms to achieve desired mission capability rates, little is of greater importance to operational commanders than munitions availability.

Having timely knowledge of anticipated shortages of munitions needed to achieve the desired operational effects serve to enhance today's warfighter capability. And according to Maj. Gen. John Barry, director of Air Force Materiel Command's Plans and Programs Directorate, The Predictive Support Awareness's munitions focus promises to provide insights to allow AFMC experts to make sure operational requirements are met the best way possible.

Monitoring inventories

Air Force plans and operations experts at the Pentagon determine the types and quantities of weapons needed to execute planned operational campaigns. Actually getting those needed munitions falls to AFMC, according to Gen. Barry.
He said by monitoring the current state of inventory; the status of on-going contracts; and the potential to accelerate individual component delivery, AFMC experts can increase options open to senior leaders as plans for prosecuting war efforts are developed, evaluated, refined and implemented.

AFMC people's courage and honor are evident in the way they are giving America's warfighters greater capabilities and their commander's greater options, said Gen. Lester Lyles, AFMC commander.

In a recent editorial, Gen. Lyles cited the Air Force Reserve Ammunition Team members at Hill Air Force Base, Utah, for distributing nearly 4 million pounds of precision-guided bombs and saving $1.5 billion by refurbishing and reconfiguring these munitions.

He also said for the first time in a close-air-support role, B-52

Munitions *continued on next page*

Providing parts

In addition to more effective leadership throughout each Air Force Materiel Command enterprise, providing parts to keep weapons systems fully mission capable to achieve desired operational effects is a prime Air Force Materiel Command mission.

AFMC experts take their parts mission very seriously, working to solve backorder problems that have plagued the supply system in years past.

One example of this is Warner Robins Air Logistics Center Special Operations Commando Control organization accelerating the repair and acquisition of special operations aircraft spares above the level that can normally be produced by available peacetime resources, officials here said. These measures were taken to meet increased Special Operations Forces requirements due to wartime demands.

Reducing backorders

Since the war on terrorism began, 3,591 backorders were aggressively managed within the integrated product teams with 3,243 requirements being filled, officials said. During the past month backorders have been reduced 12 percent from 396 to 348, and since April 1, backorders have been reduced by 37 percent.

Warfighters and other Defense Department experts use the many existing AFMC tools and data systems to gain a comprehensive view of the status of individual parts within the command. Predictive Support Awareness isn't intended to duplicate those efforts. But by using existing systems and data, it will expand current capabilities by allowing warfighters and Defense Department experts to assess future weapon system sustainment — based on parts availability, depot constraints and future planned operations, according to Maj. Gen. John Barry, AFMC Plans and Programs director.

PSA's focus on parts is based on what experts here are calling the solid foundation that systems already accepted and widely used throughout AFMC provide.

Workers at Edwards AFB, Calif., work on the hydraulics and electric systems on a CV-22.

Improving capabilities

"Integrating our assessment models and other tools will enable improved short- and long-range assessments to estimate weapon system capabilities and problem part identification," Gen. Barry said.

He said AFMC experts will use a web-based suite of tools called the Feasibility Assessment of Combat Theater Sustainment, or FACTS, to accomplish these needed assessments.

"FACTS links computer models together and allows leaders to pull information in from what has already been done to how it will impact similar situations," he said. "It's sort of like having a tool box with a lot of predictive individual tools inside."

Munitions *continued*

bombers dropped cluster bombs contained in wind corrected munitions dispensers against forces in Afghanistan with devastating effects.

"People at Eglin Air Force Base's Air Armament Center in Florida developed a guidance kit for cluster munitions in half the time expected at one quarter the cost," he said. "The weapons also exceeded all accuracy and performance requirements."

In addition, more bombs can now be dropped on target with less risk to B-1B Lancer warfighters, AFMC officials said. A B-1B Lancer crew recently flew a milestone sortie when they successfully targeted three different weapon types against four separate targets in a single, 20-second bomb pass that used precision, or "smart," weapons.

The upgrades are part of the B-1's overall conventional mission upgrade program managed by Aeronautical Systems Center's B-1 System Program Office. The added capability increases the B-1's lethality, survivability and sustainability in a conventional role. The next step in the upgrade capabilities package will add precision standoff capability to the B-1's already impressive arsenal.

JASSM is a joint U.S.Air Force and U.S. Navy effort to develoop a precision stand-off weapon designed to attack heavily defended, high priority targets, and managed at Eglin AFB, Fla.

"Every sortie launched, every target confirmed, every bomb dropped and every radio contact completed in support of our war on terrorism happens because AFMC people continue to anticipate and meet the needs of America's warfighters," Gen. Lyles said.

Combat mission needs statements and technology innovations

An F-15 Eagle refueling from a KC-10A Extender, as part of combat air patrols over the nation on Christmas day. Predictive Support Awareness, part of the AFMC transformation effort, covers all support issues and provide links to help warfighters predict needed future actions.(Air Force Photo by Mr. Kenn Mann)

Air Force Materiel Command experts say they never want to place United States troops in a "fair fight" from a technological standpoint.

Reaching beyond known technology, some of the greatest scientific and engineering minds in the world are building a bridge to link evolving innovative technologies to the field — an area defense experts say is of prime importance to warfighting in the 21st Century. Speed is of the essence.

Assessing needs

One tool to help build that bridge is combat-mission needs statements, or C-MNS. These are what warfighters initiate to tell AFMC experts what their immediate needs are, according to Maj. Gen. John Barry, AFMC Plans and Programs Directorate director. C-MNS energize AFMC to rapidly evaluate new solutions or assess new product feasibility to be used in combat.

"When an equipment problem due to terrain, weather or some other complicating factor becomes known to our warfighters in the field, it's vital that we move with all possible speed to help provide a workable solution," he said.

Currently, databases store innovative technologies and C-MNS — but they are stored separately and usually brought together only in final form, Gen. Barry said. AFMC's candidate list of PSA innovative technologies will include those that are within a matter of months of being available to the warfighter.

"The knowledge of those presently incomplete systems can be of vital use in meeting the needs of troops deployed. AFMC personnel want to be sure that the needed technology 'in work' at an 80 percent solution level is made known to a deployed warfighter so proactive decisions or acceleration may be prudently made."

Placing like items together

He said an active dialogue between innovative ideas coming to fruition within AFMC's laboratories and emerging needs of fielded troops seems the only way to begin to take a proactive approach to solving troublesome problems that are unforeseen — the unknown-unknowns. That's where PSA's technology innovations and combat-mission needs statements focus comes into play.

"While technically meeting any newly surfaced need may be reactive, PSA will attempt to bundle like requirements and like technologies together to see if matches of need and capability can be made sooner," Gen. Barry said.

Information on pages 16-18 provided by Air Force Materiel Command Plans and Programs Directorate and written by Tech. Sgt. Carl Norman, AFMC Public Affairs

The dog you save could be your own!

EDWARDS AIR FORCE BASE, Calif. — Ms. Vickie Coutts, facilitator and secretary of Adopt-a-Pet at Edwards Team Rescue and Kennels at Edwards plays with Riley, a dog up for adoption.
— Reported by AFFTC Public Affairs (Photo by Airman 1st Class Wes Auldridge)

Following a decade of storage, F-16s like new

EGLIN AIR FORCE BASE, Fla. — Eglin pilots will be flying training, photo chase and test support missions and instructing new pilots in "brand new" old F-16s — four of them resurrected and regenerated from more than a decade of storage.

The aircraft were originally part of a deal U.S. officials brokered with the Pakistani prime minister to sell 28 F-16s to that government. The agreement broke down after Pakistan ignored the nuclear non-proliferation policy of the U.S. government and its allies, canceling military foreign sales to that country.

That left the aircraft in storage at the Aerospace Maintenance and Regeneration Center at Davis-Monthan AFB, Ariz. Air Force officials will take ownership of 14 aircraft, and the Navy will get 14. Eglin's 40th Flight Test Squadron will retire three of their older F-16s next year after receiving the four regenerated aircraft.

— Reported by AAC Public Affairs

Robins program improves workforce IT skills

ROBINS AIR FORCE BASE, Ga. — Fifteen engineers here improved their information technology skills thanks to a new partnership program with Macon State College.

Georgia's Intellectual Capital Partnership Program, or ICAPP, is a growing partnership that is very important to the future of Robins and its workforce.

Under ICAPP, Macon State College provides an intensive, six-month information technology program to help currently employed Robins engineers with high-tech airborne systems and other software technologies in their field.

The program is a state-sponsored project intended to produce more software specialists for one of the nation's key defense logistics centers. Robins' first group, made up of engineers from varying information technology backgrounds, recently graduated from the program.

— Reported by WR-ALC Public Affairs

Upgrade to AEDC's H3 large arc facility complete

ARNOLD AIR FORCE BASE, Tenn. — The Arnold Engineering Development Center has validated a new capability for aerothermal testing of hypersonic reentry vehicle materials such as those incorporated into the intercontinental ballistic missile and the Navy submarine-launched ballistic missile systems.

The H3 large arc heater was developed here during the 1990s to support aerothermal testing for future hypersonic systems. Following a 15-month upgrade and reactivation project that started in fiscal 2002, the test team achieved a significant milestone this fall when they successfully tested the first customer test article in H3. In addition, they acquired heat flux and pressure probe data for the first time.

The facility upgrades, funded by a tripartite agreement between the Air Force Materiel Command, the Naval Surface Warfare Center and the Air Force Reentry Vehicle Application Program, were directed at demonstrating initial operating capability of the heater. The project's scope included fabrication and installation of a simple model injection system, as well as an extensive effort to modify the facility cooling water systems and reactivate H3 systems. The checkout and calibration runs completed to date represent the first operational runs in the facility since 1997.

— Reported by AEDC Public Affairs

AFRL major skydives with Army Golden Knights

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — An Air Force Research Laboratory major is off to train with the Army Golden Knights Skydiving Team at their Winter Camp in Lake Wales, Fla.

Maj. Rhonda Reichel has many athletics accolades to her name. She was the Montana State Road Race Female Champion in 1996 and completed the Olympic trials for individual time trials that same year. She was the Female National Military Cycling Champion in both 1998 and 1999, where she rode more than 100 miles in three days. She has been jumping for less than 20 months.

Her most recent skydiving accomplishment was participating in the Conseil Internationale du Sports Militare World Military Parachuting Championships last fall in Oran Algeria (North Africa).

This 1991 Air Force Academy graduate was asked to jump with the world-renowned Army Golden Knights after they saw her compete at Nationals.

Maj. Reichel's next skydiving competition is the Arizona Classics at Marana, Ariz., in March.

— Reported by AFRL Public Affairs

U.S., German, industry officials ready Global Hawk for ‘03 demonstration

Two flight tests held recently at the Air Force Flight Test Center, Edwards Air Force Base, Calif., confirmed the first successful operation of a German High Altitude Long Endurance Intelligence sensor onboard the Global Hawk Unmanned Aerial Vehicle.

During the missions, the sensor — manufactured by EADS, Friedrichshafen-Ulm, Germany, and integrated by Global Hawk prime contractor Northrop Grumman Integrated Systems, San Diego, Calif. — radar transmissions detected from emitters located at the Naval Air Warfare Center at China Lake, Calif., and sent them down a line-of-sight communications link to a German Ground Support Station.

A first step

The tests were the first step toward developing a possible German-owned and operated Global Hawk derivative — the Euro Hawk — to replace the aging Breguet Atlantic aircraft and fly operational signals intelligence missions, according to U.S. Air Force, German Federal Ministry of Defense and aerospace industry program officials.

“These test flights are part of ongoing risk-reduction efforts to prepare Global Hawk for deployment to Germany in Spring 2003,” said Col. Scott Coale, Air Force program director, Reconnaissance Systems Program Office, Aeronautical Systems Center at Wright-Patterson AFB, Ohio, which manages the UAV’s development and acquisition.

Since Oct. 19, 2001 — following formal approval by Deputy Undersecretary of the Air Force Mr. Willard Mitchell and Deputy National Armament Director Mr. Rolf Schreiber air equipment and technology, German FMoD — an international team of Air Force, German FMoD, Northrop Grumman Ryan Aeronautical Center and EADS officials has been planning Global Hawk’s deployment to demonstrate the interoperability of U.S.-German UAV systems.

A partnership in every way

The agreement focuses on jointly developing and integrating a German electronic intelligence payload on Global Hawk; exchanging of flight certification information between the United States and Germany; and deploying of the UAV to Germany to prove the conceptual feasibility of its signals intelligence payload.

“This cooperative effort represents an important achievement: the basic functional capability to cover future German operational needs,” said Lt. Col. Michael Hain, deputy section leader, Plans and Policies for Reconnaissance, German FMoD.

A program milestone

According to Mr. Ralph Herzog, deputy section leader, Fighter Aircraft and UAV, German FMoD, the deployment will mark another joint program milestone.

“The exchange of flight certification information and airspace coordination will facilitate Global Hawk’s operation in European airspace for the first time,” he said.

During the deployment, Global Hawk will fly three to six ELINT missions in pre-coordinated airspace above the North Sea from Nordholz, 60 miles northwest of Hamburg, consortium officials confirmed.

For current U.S. Air Force Global Hawk fact sheet and photo, please access http://www.af.mil/news/factsheets/global.html.

— Ms. Sue Baker, ASC Public Affairs

C-130J accomplishes three major deployment milestones

The 418th Flight Test Squadron C-130J test team at Edwards Air Force Base, Calif., successfully accomplished three major deployment milestones during October and November to achieve the Air Force’s increasing Rapid Global Mobility mission.

The team completed test deployments with a CC-130J aircraft, which is a 15-foot stretched version of the standard C-130J, in both Arizona and California.

The J-model, the latest in the C-130 line, is an integral part of the Air Mobility Force and operates with a three-man crew, new engines with six-bladed propellers and the latest in avionics.

A dual purpose

Aircrews from the 418th FLTS, Air Force Operational Test and Evaluation Center, Air National Guard, Air Force Reserve and contractor personnel provided their unique areas of expertise to successfully accomplish both developmental and operational test objectives.

Lt. Col. Mike Brignola, project operational test and evaluation director and one of the C-130 pilots, praised the efforts of the test team. “The combined efforts of everyone involved allowed for simultaneous accomplishment of both developmental and operational test objectives in order to expedite aircraft capabilities to the users,” said Col. Brignola.

In early October, the test team deployed to Yuma, Ariz., to test the assault takeoff, landing and performance capabilities of the aircraft. The test points were accomplished on a dirt airstrip that recreated the conditions of runways the plane will likely encounter during combat missions in remote hot spots anywhere in the world.

The airplane’s computer avionics were also exercised to determine how well the onboard system could guide the aircraft down to a landing. The avionics consistently allowed the aircrew to land in the touch down zone within the first 500 feet of the strip.

The next step

The second deployment was to Channel Islands Air National Guard Base, Calif., near Point Mugu Naval Air Station, to verify the proper functioning of new avionics hardware and software that were just released from the production line.

The results of the testing cleared the way for the aircraft’s release for use by operational aircrews assigned to the Channel Islands unit.

For the final deployment, the combined test team again traveled to Point Mugu NAS to test the firefighting capabilities of the aircraft, a primary mission for the California Air National Guard wing stationed at the base.

The testing consisted of several flights over rugged terrain in the Sierra Nevada mountains to determine how well the plane could fly low and slow to drop fire retardant agents in remote locations.

According to test team members, all test points were accomplished satisfactorily because the C-130J’s improved engine power-to-climb rates, which is a significant advantage over older C-130s.

Capt. Brandon Wilkerson, deployment commander, said he was pleased with the results of the test team effort.

— Mr. Larry Harjes, 418th Flight Test Squadron

Testers from the 418th Flight Test Squadron at Edwards AFB, Calif., C-130J team successfully accomplished three major deployment milestones recently in both Arizona and California. (Courtesy photo)

Civilians step-up to force protection

Force protection is everyone's responsibility in the Air Force and that's most evident at two Air Force Materiel Command bases where civilians are now helping man the gates during the morning rush.

Civilians at Wright-Patterson Air Force Base, Ohio, and Robins AFB, Ga., were quick to volunteer for the force protection detail and assist in 100 percent identity checks at the gates.

Stepping up to the plate

At Wright-Patterson, Mr. Barry Roland, professor at the Defense Acquisition University, said he was surprised when civilians were offered the opportunity to help keep the base secure. Following a brief but thorough training session, Mr. Roland worked the gate for the first time in December.

"I was glad to get out and do my part," Mr. Roland said. "After the Sept. 11 attacks, it was frustrating not being able to do more to assist in the war effort. But now, working side by side with our security forces troops who really need the help, I feel like I'm making a small contribution towards our defense."

When the force protection detail was first implemented at Wright-Patterson, only active duty members were asked to volunteer at the gates. But it wasn't long before civilian employees began asking if they could help too, according to Master Sgt. Cynthia Smalls, 88th Security Forces Squadron, NCOIC of security forces training.

"We've trained more than 100 civilians since November," Sgt. Smalls said, "and more civilians keep signing up for the weekly training sessions. The only problem I can foresee is not having a large enough database to place the names for my roster!"

Volunteers at both Wright-Patterson and Robins undergo similar training in what to look for and emergency procedures. With armed security forces working alongside the civilian augmentees, Lt. Col. Mark W. Papen, 78th Security Forces Squadron commander at Robins, said the program has been a success. "Over time, this has demonstrated the true warrior spirit of Team Robins."

A top priority

Both bases had to do a little research before adding civilians to the force protection roster. "It was simply a matter of clearing some bureaucratic hurdles," according to Lt. Gen. Dick Reynolds, Aeronautical Systems Center commander. "Force protection is our top priority. I can't tell you how proud I am of all our civilian and military force protection volunteers. They're truly 'warriors supporting warriors.'"

And it's the warrior spirit that drives Mr. Roland, a former Marine and Department of Defense employee since 1982. He hopes other civilians who see him at the gate will join the ranks of the force protection detail.

"I strongly encourage civilian personnel to volunteer because it's good for the troops to see us out here," he said. "They need to know that we're all in this together. Personally, the Air Force has been very, very good to me and this is one of the ways I can pay them back.

— 2nd Lt. Christy Stravolo, AFMC Public Affairs

Sir Frank Whittle (left) and Dr. Hans von Ohain, AFRL's chief propulsion scientist, compare drawings of ther patented turbine engines during an historic meeting at Wright-Patterson AFB, Ohio. Both are recognized as the co-inventers of the jet engine.

Propulsion heritage, traditions continue

Her . i . tage (her'i-tij) *Something passed down from preceding generations: Tradition.*

Mr. Michael Kelly
AFRL Propulsion Directorate

Despite the passing decades, tangible evidence still remains from the early 1900s — the groundbreaking days of aerospace and propulsion research at the fledgling Wright Field. Historical buildings stand prominently throughout what is now Wright-Patterson Air Force Base, Ohio, their foundations still strong with the mortar and brick put in place by hardworking people who have long since passed.

Also intact in the hearts and minds of the base's scientists and engineers is the passion and commitment to ideas — ideas that promise to carry the traditions of inventors like Orville and Wilbur Wright well into the 21st century and beyond.

Within the Air Force Research Laboratory's Propulsion Directorate, uncompromising ties to the traditions of their past keeps focused squarely on the future, according to their director.

"Staying connected with our tremendous heritage is a very real priority in the engine community," said Col. Al Janiszewski, propulsion director. "We do this in an important way: we do it by sharing the same incredible sense of innovation the Wright brothers displayed by developing revolutionary technologies that make today's Air Force second to none. We honor our past while creating our future."

Helping draw attention to that past is a unique and significant project to document propulsion's contribution to America's aerospace achievements.

Dubbed "Heritage Hall," and dedicated this summer by AFRL Commander Maj. Gen. Paul Nielsen, the march of propulsion progress from the earliest days of research and development is on display for the current generation of innovators who walk the halls.

A cursory look at the hall's historical photos reveals the progress of propulsion technologies since Orville and Wilbur bolted their horizontal "guinea pig" engine to their 1903 Wright Flyer and fired it up.

One of the most remarkable pieces of the collection is a photograph of a little known, but significant event that brought together two of the world's greatest inventors — Dr. Hans von Ohain and Sir Frank Whittle, co-inventors of the jet engine.

On May 3, 1978, propulsion directorate officials hosted the historic meeting where the two innovators provided propulsion scientists and engineers with an informal discussion of the events, anecdotes and circumstances that led each of them to discover the jet turbine and its first use to power flight.

Dr. von Ohain, then chief scientist of the Aero Propulsion Laboratory of the Air Force Wright Aeronautical Laboratories, shared how prior to World War II, each was working separately and knew nothing of the other's work — Dr. von Ohain working for the German Luftwaffe and Sir Whittle serving as a Royal Air Force officer.

Although Sir Whittle registered a patent for the turbojet engine in 1930, he did not perform a flight test until 1941. Dr. von Ohain was first to design and develop a turbojet engine to power an aircraft. He was granted a patent for his turbojet engine in 1936 and by September 1937 he had built a factory-tested demonstration engine. In 1939, as a member of the Heinkel Company in Rostock, Germany, Dr. von Ohain fielded a fully operational jet aircraft, the He 178.

Following the war in 1947, Dr. von Ohain came to the United States and became a research scientist at Wright-Patterson. He was appointed chief scientist of the Aerospace Research Laboratories in 1963 and later became the chief propulsion scientist.

In celebration of the Centennial of Flight, many more propulsion accomplishments can be viewed in Bldg. 18's Heritage Hall at Wright-Patterson.

AFMC engineers live and work overseas supporting warfighter mission at USAFE

In a Memorandum of Agreement signed in 2002, Air Force Materiel Command agreed to maintain two in-theater engineers with United States Air Forces in Europe to provide engineering support for the USAFE mission.

According to the agreement the AFMC Engineer-in-Theater, or EIT, offices at Ramstein Air Base, Germany, and Royal Air Force Lakenheath, United Kingdom, serve as the AFMC on-site engineering representatives to USAFE for the AFMC System Program Offices for the A-10, F-15, F-16, C-130 and KC-135 aircraft.

The offices work with each of the AFMC Systems Program Office directors and chief engineers to repair and sustain these weapon systems, as the communications link between the SPO and the warfighter.

Rapid response

The offices work directly with warfighters to ensure AFMC meets their needs, specifically structural anomalies requiring engineering dispositions. Rapid response to damaged or broken aircraft in-theater is expected to lessen the amount of down time an aircraft can experience while awaiting depot maintenance.

The EIT position is part of the Warner Robins Air Logistics Center, Technology and Industrial Support Division, Robins Air Force Base, Ga. But while WR-ALC heads up the program, Oklahoma City ALC, Tinker AFB, Okla., and Ogden ALC, Hill AFB, Utah, are active participants.

Mr. Mike Sharifi, of the EIT office at Ramstein, said the EITs are responsible for expediting repair actions, providing repair dispositions, assessing damage and speeding up the process of returning aircraft to a mission capable status.

Maj. George Rogers, chief of the AFMC Commander's Office, HQ USAFE, Ramstein, states, "this is a capability that our USAFE customers requested and the program is proving to be a great success." Since beginning operations in January 2002 the EIT office disposition time for all technical problems was drastically reduced."

"Average response time to discrepancy reports or requests for engineering support was reduced to one hour," he said. "Requests that in the past may have taken a day to solve are in many cases being solved in a matter of minutes. The bottom line is these time savings result in increased aircraft availability for our USAFE warfighting," said Maj. Rogers.

The program is working

One of Mr. Sharifi's successes involves the KC-135 Stratotanker, which previously spent months out of service due to fuel leaks in the side fuel tank. He recommended a short term fix that resolved the problem.

"I recommended the leakage problem be fixed with the use of a rubber lining for the fuel tanks to keep the planes serviceable," he said. "To keep up with the demand and to avoid down time I also recommended the liners be made available without delay, and that we keep extra in stock."

The repair is short term but keeps the tanker in service until the fuel tank can be replaced during regularly scheduled depot maintenance at Tinker.

Quite often a depot maintenance solution is not available and maintenance solutions must be performed on sight. Mr. Paul Koenig of the EIT office at Lakenheath, shows what on-site engineering can do for the USAFE F-15 program.

"My first major engineering challenge involved the titanium skin covering the left engine on an F-15," he said.

"After researching the problem of cracks in the titanium aft center fuselage corrugated panel over the left engine, I recommended a panel replacement, to which the F-15 SPO agreed," said Mr. Koenig.

"A maintenance crew was unavailable to make the repairs until after the holiday season, and we needed the repair done immediately. I began working with the local fabrication flight and a local sheet metal shop signed up to perform what would normally be a depot maintenance level repair.

"The team at the sheet metal shop did an outstanding job on the skin replacement and the aircraft had its flight safety check by January 10, 2003. This effort provided a significant reduction in the down time for this aircraft," said Mr. Koenig.

Mr. Mike Sharifi, AFMC engineer at Ramstein Air Base, Germany, inspects the workings of United States Air Forces in Europe aircraft. (USAFE photo by Maj. Mike Young)

"The EIT program has helped the USAFE mission greatly by reducing down time of aircraft," said Mr. Sharifi.

Continuing efforts

Gen. Greg Martin, USAFE, commander agrees.

In a letter addressed to Gen. Lester Lyles, AFMC commander, Gen. Martin stated, "I have no doubt the EIT offices continued efforts will be a force multiplier that will provide a measurable increase in USAFE aircraft availability."

The EIT program is just one of the many programs AFMC has in place to provide support to the warfighter. Through proactive efforts AFMC remains on the leading edge of what is needed in the battlespace.

— 2nd Lt. Gailyn Whitman, AFMC Public Affairs

Tinker employee wins big on Price is Right

"Ms. Evangeline Montanez...come on down, you are the next contestant on the Price Is Right!"

Those words recently rang through the CBS television studio, calling for the Tinker Air Force Base, Okla., employee to have a chance to win big. The show aired Dec. 2.

Ms. Montanez, a contract administrator in the operational contracting division, won more than $41,000 in prizes. She was the fifth person called to "Contestant's Row" and won the bid on her first try.

She said she was surprised and nervous when she heard her name called. "I tried to calm down so I could think," Ms. Montanez said. "I had to concentrate on what I was doing."

When she walked on stage to meet Mr. Bob Barker, she told him she worked at Tinker. She then learned about the next prize offered...a red 2003 Ford Taurus she had to win by playing the Temptation game.

She was shown various other prizes — a riding lawn mower, a wine rack, perfume and an underwater camera. She had to choose a number from the price of the other prizes to fit into the value of the car. After choosing the numbers, her guess on the car's value was $11,865.

She said she realized the price was too low...so when Bob Barker asked her if she wanted to change any numbers, she changed the second '1' to a '9' and won the $19,865 automobile and the other prizes.

Spinning the wheel

Ms. Montanez was brought back to spin the Big Wheel to determine who plays the Showcase Showdown, the show's final big-prize offering. As the third and last spinner, she had to beat 80 cents. Contestants are allowed two spins on the wheel to see who gets closest to $1 without going over. The wheel stopped at 85 cents on her first try.

As the day's biggest winner, she was given the chance to bid on the first showcase — trips to New York City and Hawaii, an Alaskan cruise and a red Chevrolet S-10 pickup — or to take the next showcase. She passed on the first.

"I wasn't sure what to bid on the first showcase," she said. "Usually they put the better prizes in the second showcase, but they switched it this time."

She had to bid on the second showcase — a dining room set, dinnerware, a china cabinet, camping equipment and an amphibious all-terrain vehicle.

Ms. Montanez's opponent, a sailor, was about $8,000 too low on his bid of the first showcase. Ms. Montanezk was only $2,442 short of the $17,442 second showcase and subsequently declared the winner.

Planning ahead

She ordered Price is Right tickets in August because she was going to California to visit her aunt in San Francisco. But despite planning months ahead, Ms. Montanez nearly missed her brush with fame.

"We almost didn't make it due to heavy traffic," she said.

Heavy traffic nearly kept Ms. Evangeline Montanez from her date with destiny on the popular television game show, "The Price is Right." But by the end of the show, the contract administrator had more than 41,000 reasons to smile. (Photo by Ms. Margo Wright, OC-ALC Public Affairs)

Ms. Montanez, her cousin, and her cousin's friends arrived at the studio around 8 a.m. and waited outside the studio for more than six hours before show officials began taping at 2:30 p.m.

Ms. Montanez, her cousin and friends were not among the 300 selected for the studio audience, but the show's staff decided to add 20 more and she and her party were included.

Once inside, she said, "they had somebody making us laugh and practice clapping."

The celebration continues

Ms. Montanez will still be clapping when she receives her prizes. She said she doesn't know whether she'll keep all of them or sell some since she already has a dining room set. She may ask the manufacturer if she can trade it for a bedroom set.

As for the camping equipment, she said she goes camping "a little bit...I may have to now," she laughed.

— Mr. Ray Dozier, OC-ALC Public Affairs

Everything you wanted to know about surviving the deployment of a loved one

Ms. Holly Logan,
WR-ALC Public Affairs

Three-year-old Braeden Adair sat in the bay window of his house with his black Labrador-Great Dane, Logan, every day waiting for daddy to come home from work, but daddy was 2,000 miles away defending the country's freedom.

Deployment not only has a profound effect on the military member serving our country, but it also touches the emotions of their family and friends, no matter their age.

Capt. James Franz, chief of psychological services at the Life Skills Center at Robins Air Force Base, Ga., said it's common for a servicemember's deployment to cause distress in the lives of loved ones, but how one handles the stress makes the difference between a difficult adjustment and a smooth transition.

"All of the people in the military member's immediate environment are going to face an increase in stress," he said. "The level of increase will depend on how close they are or work with the individual, and how the stress will impact each person also depends on the level of that person's coping skills and social support."

Capt. Franz said while the deployed military member and others are affected by the change, they may experience the stress in different ways.

"The service members will be more stressed because their day-to-day lives will be fundamentally changed," he said. "They will be leaving behind friends, family and community with which they are familiar. The unit will be under stress because that deployed member's job is now distributed to those left behind, individuals that already had a full workload.

"Families of deployed members face a two-fold increase in stress: they must absorb all of the household responsibilities and duties, and they must face these stressors without one of their main social supports," he continued.

Being prepared

According to Capt. Franz, the best time to prepare loved ones and co-workers for a member's pending deployment is right away.

"The best method of preparing yourself for deployment is as early as possible," he said.

"Start arranging for the non-deploying family members to be aware of and capable of handling the responsibilities the deploying member will no longer be able to perform, such as managing finances, children's medical and school appointments and other family obligations," he said. "Families that are prepared tend to experience less stress."

Change of any kind can be difficult, but the extended absence of a military parent being deployed often brings a slew of emotions for the child at home.

Waiting for daddy's return

When Senior Airman Joel Adair deployed in 2001 for Operation Enduring Freedom, his son was left wondering when his daddy would ever come home.

"I didn't have much time to explain it to my family," he said. "I was gone within 36 hours of the news that I was deploying. I think my son took it the hardest. I told him that daddy has to go to work somewhere else for a while. My wife said he kept waiting for me to come home, but I didn't get to for four months."

Airman Adair's wife said her son's adjustment was difficult in the beginning, but with time came a new routine. "The first three weeks were the hardest," she said. "He didn't want to sleep alone. He would come get in bed with me. His father was usually the one to pick up him from daycare. It took him about six weeks to fully adjust to his being gone.

"Joel had to miss Braeden's second birthday," she said. "It was hard on both of them."

Caring for the emotional and physical needs of a young child while the military parent is deployed is challenging enough. When you combine that with a spouse's own concerns about the deployment and added family roles, you have the recipe for stress.

"It was really hard at first," she said. "I had to clean the house, do the laundry, cook, take care of Braeden, pay the bills….I had to do everything while he was gone," she said.

For some enduring the impact of deployment, one of the biggest challenges is transferring roles of family responsibilities. The Adairs prepared for these potential changes from day one of their marriage.

"We decided from the beginning that I would be the one to handle our finances since he would be deploying throughout his military career," she said. "I keep him updated on our finances, but I'm the one who handles the books. That wasn't an adjustment we had to make. The biggest adjustment for us came when Joel came home. For all that time, I've been the one handling everything myself. Now, suddenly, there's a shift in authority again. It was difficult for a while."

The most welcomed transition in the deployment experience for military members and their families is homecoming.

It was a cold 22 degrees when Airman Adair returned home from his mission. Mrs. Adair left their young son at daycare while she welcomed her husband home.

"He was happy to see me, but he kept asking where Braeden was," she said. "He couldn't wait to go pick him up."

When Airman Adair entered his son's daycare, he was still wearing his desert battle dress uniform. His uniform coupled with a darkened tan from long hours in the Middle Eastern sun, brought a confused expression upon Braeden's face.

"It took him a few minutes," Mrs. Adair said. "He stood across the room just staring at his father. Then, it was like a light went on in his mind. He ran across the room toward Joel and screamed, "DADDY!"

Braeden Adair and his dog, Logan, spent many hours looking out the window, waiting for dad to return from his long deployment. Senior Airman Joel Adair, Robins AFB, Ga., deployed in 2001 for Operating Enduring Freedom.

Making adjustments

When Mr. Gary "Leo" Compton from Robins was deployed for three months at the beginning of 2002, his wife was left to care for their 18-month-old daughter, Kirstin, and make some emotional adjustments herself.

"Going to bed at night was hard," she said. "I'd pack up pillows around me, but it wasn't the same as having him here with me."

She was fortunate to have her family nearby for support and she said she relied on them a lot to help with the adjustment of her husband's absence.

Mrs. Compton said one of the biggest changes she had to make while her husband was deployed was in her cooking.

"I love to cook," she said. "I'm used to cooking big meals for us. After he left, I'd catch myself making dinner for both of us and have to remember that I was cooking for one."

She said she wanted to ensure her husband wouldn't miss a single special moment while he was deployed. "I kept the video camera going almost non-stop in case Kirstin did something new," she said.

Mrs. Compton said she was excited to welcome her husband home, but sharing her husband's time with her young daughter brought mixed emotions.

"I was happy he was home," she said. "I knew he wanted to spend time with Kirstin, but I wanted time alone with him, too. I felt bad about being jealous of my daughter. He spent a lot of time with her. When she'd go to sleep, we had time together though.

"One of the best things about Leo being home was that I got to cook again," she said. "We had leftovers for days."

Someone to lean on

Having the support of family and friends is helpful when a military member deploys, but when one doesn't have that support, the family support center can help.

Ms. Krystal Shiver, former work life consultant with the family support center, said the center offers an array of services that help family members cope with deployment.

"We are a safe place for family members to get assistance in regards to their needs and feelings," she said. "The Hearts Apart program we offer includes free childcare assistance, free car maintenance assistance, free phone cards, video and telephonic morale calls, as well as other services such as support groups."

Along with these services, the center also provides materials for spouses of deployed members to help their children understand the change and better cope in a fun format.

"One booklet we have for young children when their military parent deploys is called, 'My book about when my military parent has to go away,'" she said. "Inside, there is a picture of a little boy and his mother in service dress for them to color. The pictures in the book have captions like 'You are special. Your parent is in the military. Your parent helps keep our country safe. You may be sad. Your parent misses you.' We also give out a letter writing kit with stationary, stickers, cards and envelopes to military members so they can stay in touch."

The center also offers a wide range of services for the military spouse coping with the deployment as well. "We have a unit spouse volunteer program to help military spouses while the member is away," Ms. Shiver said. "Each squadron commander or first sergeant has the opportunity to choose a spouse to be a representative point of contact for other spouses to contact. The unit spouse volunteer calls the spouses to make sure they are doing okay and may develop a newsletter to inform others of what is going on around the base."

Ms. Shiver said the center also hosts special events such as "Deployed Families' Night Out" dinners and "Children's Day," which give spouses an opportunity to get out and meet others.

Developing healthy coping skills and utilizing the wide range of services offered for families at Robins are tools to help ease the discomforts associated with deployment, but when sleepless nights and negative emotions persist, the professionals at the Life Skills Center offer support.

"It is typical to see difficulties in sleep, appetite, energy level, concentration and the ability to enjoy oneself when a major stressor has occurred in people's lives," Capt. Franz said. "If these problems continue for long periods of time, people may need to come see us."

"Take care of yourself!" Capt. Franz said. "Only by ensuring that you monitor your own well-being will you be able to handle the situations you may face as effectively as you otherwise might."